

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave.St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000606**Date Inspected:** 06-Oct-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xu Bing**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** N/A**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication of the Mock-up 77, 89 and 114 meters elevations scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Tower Mock-up 89 Meter Elevation.

ZPMC, welder Han Xiao Feng was observed by the QA Inspector performing tack welding operations at the skin plate shop splice jointing plate MA24 and mp505, weld joint # 5 following the approved welding procedure specification WPS-B-T-2211-B-U3b. Base metal was designated as A-709 Grade 345. ZPMC was using the shielded metal arc welding (SMAW) process in the flat (1G) position with 5.0 mm diameter electrode designated as E7018/AWS A5.1, brand name TL-508. The QA Inspector verified amperages, preheat and heat interpass temperatures. The QA inspector found that welding parameters appeared to be in accordance with the contract documents.

Tower Mock-up 77 Meter Elevation

The QA inspector performed visual inspection to the skin plate B and C at the junction of the longitudinal stiffeners to the skin panel B and C. The QA inspector found that the welds appeared to be in compliance with contract documents

Item	Description	WBS	Dwg No.	Status
1	Tower Splice Mock-up 114 M weld joint # 3 longitudinal stiffener to A75 internal splice plate			
	ZPMC, welders Yun Jun Xian was observed by the QA Inspector performing welding operations on the internal splice panel A75. Mr. Zhan was observed welding the filler passes at the junction of the mp1 to skin panel A, joint #			

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1 following the approved welding procedure specification WPS-B-T-2332-TC-U5-F. Base metal was designated as A-709 Grade 50. ZPMC was using the flux cored arc welding (FCAW) process in the horizontal (2G) position with the 1.4 mm diameter electrode designated as E71T-1 /AWS A5.20, brand name Supercored. The QA Inspector verified amperage, voltage, travel speed, preheat and heat interpass temperatures for the filler passes. The QA inspector found that the welding parameters recorded after ZPMC approved Certified Welder Inspector Xu Bing appeared to be in accordance with the contract documents.

The QA inspector had a conversation with the QA Manager Lu Jian Hua. Mr. Lu Jian Hua relayed that ZPMC technical department was searching for the possible causes for the high rejection rate by ultrasonic testing (UT) method. The first action that ZPMC technical department wanted to take was using one of the ZPMC's best welders to obtain a 90 % free of rejectable indications weld joint and evaluate the influence of the welder skill on the FCAW operations on that particular joint.



## 2 Machining and drilling operations

The QA inspector observed ZPMC personnel performing machining operations at the bevel preparations for the web plate p842-1 Tower Mock-up 89 meter elevation and the drilling operations on the splice plates for the Tower splice Mock-up 114 meter elevation. The photographs below show the machining and drilling operations in process.



## Summary of Conversations:

As noted above.

## Comments

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This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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**Inspected By:** Acuna,Alfredo

Quality Assurance Inspector

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**Reviewed By:** Cuellar,Robert

QA Reviewer